

CLAIMS

We claim:

1. A method of coating a porous hydrophobic polymer with a hemocompatible
5 coating comprising:
 - a) providing a first solvent that wets said porous hydrophobic polymer;
and,
 - b) dissolving a second solvent in said first solvent wherein said second
10 solvent enhances the solubility of a hemocompatible coating substance in
the mixture of said first solvent and said second solvent; and,
 - c) dissolving said hemocompatible coating substance in said mixture of
said first solvent and said second solvent, thereby creating a coating
solution; and,
 - d) contacting the surface of said porous hydrophobic polymer with said
15 coating solution thereby causing thereby hemocompatible coating substance
to deposit onto said surface of said porous hydrophobic polymer.
2. A method as in claim 1 wherein said second solvent is dissolved in said first
solvent in such quantity as to form an azeotropic mixture.
3. A method as in claim 1 wherein said porous hydrophobic polymer comprises a
20 blood-contacting component of a medical device.
4. A method as in claim 3 wherein said medical device is a stent.
5. A method as in claim 1 wherein said porous hydrophobic polymer includes at
least one polymer selected from the group consisting of porous

polyethylene, porous polypropylene, porous polyurethanes, porous polyacrylates, porous polymethacrylates and porous fluoropolymers.

6. A method as in claim 5 wherein said porous fluoropolymer is expanded poly(tetrafluoroethylene).
- 5 7. A method as in claim 6 wherein said first solvent is selected from the group consisting of tetrahydrofuran, dioxane, fluoropolymer-wetting alkanes, fluoropolymer-wetting cycloalkanes, fluoropolymer-wetting ethers, fluoropolymer-wetting chlorofluorocarbons, fluoropolymer-wetting hydrofluorocarbons and mixtures thereof.
- 10 8. A method as in claim 1 wherein said hemocompatible coating substance comprises a complex of heparin with a hydrophobic counter ion.
9. A method as in claim 8 wherein said hydrophobic counter ion is a hydrophobic quaternary ammonium ion.
10. A method as in claim 8 wherein said hydrophobic counter ion is selected from
15 the group consisting of benzylalkonium ion and tridodecylmethylammonium ion.
11. A method as in claim 1 wherein said second solvent is selected from the group consisting of organic alcohols, ketones and mixtures thereof.
12. A method as in claim 1 wherein said second solvent is dissolved in said first
20 solvent in an amount from about 0.00001% up to saturation.
13. A method as in claim 12 wherein said second solvent is dissolved in said first solvent in amount from about 0.1% to about 10%.
14. A method as in claim 13 wherein said second solvent is dissolved in said first solvent in amount from about 0.1% to about 2%.

15. A method as in claim 14 wherein said second solvent is dissolved in said first solvent in amount from about 0.5% to about 1%.
16. A method as in claim 1 wherein said first solvent is a mixture of isomers of dichloropentafluoropropane and said second solvent is methanol dissolved in said first solvent so as to form a 6% solution.
17. A method as in claim 1 wherein said first solvent cyclohexane and said second solvent is n-propanal dissolved in said first solvent so as to form a 5% solution.
18. A method as in claim 1 wherein said hydrophobic polymer is coated with said hemocompatible coating substance by dip coating.
19. A method of coating a blood-contacting porous hydrophobic polymer component of a medical device, the method comprising:
- a) providing a first solvent that wets said porous hydrophobic polymer; and,
 - b) dissolving a second solvent in said first solvent wherein said second solvent enhances the solubility of a hemocompatible coating substance in the mixture of said first solvent and said second solvent; and,
 - c) dissolving said hemocompatible coating substance in said mixture of said first solvent and said second solvent, thereby creating a coating solution; and,
 - d) contacting the surface of said porous hydrophobic polymer with said coating solution causing thereby said hemocompatible coating substance to deposit onto said surface of said hydrophobic polymer.
20. A method as in claim 19 wherein said medical device is a stent.

21. A method as in claim 19 wherein said porous hydrophobic polymer comprises expanded poly(tetrafluoroethylene).
22. A method as in claim 19 wherein said hemocompatible coating substance is a complex of heparin with a hydrophobic counter ion.
- 5 23. A hemocompatible polymer produced by:
- a) providing a first solvent that wets said porous hydrophobic polymer; and,
 - b) dissolving a second solvent in said first solvent wherein said second solvent enhances the solubility of a hemocompatible coating substance in
10 the mixture of said first solvent and said second solvent; and,
 - c) dissolving said hemocompatible coating substance in said mixture of said first solvent and said second solvent, thereby creating a coating solution; and,
 - d) contacting the surface of said porous hydrophobic polymer with said
15 coating solution thereby causing thereby hemocompatible coating substance to deposit onto said surface of said porous hydrophobic polymer.
24. A hemocompatible polymer as in claim 23 wherein the coating thereon is a complex of heparin.
25. A hemocompatible polymer as in claim 23 wherein the polymer is expanded
20 poly(tetrafluoroethylene).
26. A medical device wherein at least one surface thereof contacts blood, and wherein at least a portion of said at least one blood-contacting surface of said medical device comprises a hemocompatible polymer produced by:
- a) providing a first solvent that wets said porous hydrophobic polymer;
25 and,

- b) dissolving a second solvent in said first solvent wherein said second solvent enhances the solubility of a hemocompatible coating substance in the mixture of said first solvent and said second solvent; and,
- 5 c) dissolving said hemocompatible coating substance in said mixture of said first solvent and said second solvent, thereby creating a coating solution; and,
- d) contacting the surface of said porous hydrophobic polymer with said coating solution thereby causing thereby hemocompatible coating substance to deposit onto said surface of said porous hydrophobic polymer.

- 10 27. A medical device as in claim 26 wherein said medical device is a stent.
28. A medical device as in claim 27 wherein said at least one blood-contacting surface of said medical device is a stent cover.